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by Kellie A. Langlois, Leanne C. Findlay
and Dafna E. Kohen

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..	not available for a specific reference period
...	not applicable
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0[s]	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
E	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)

Dietary habits of Aboriginal children

by Kellie A. Langlois, Leanne C. Findlay and Dafna E. Kohen

Abstract

Based on the results of Statistics Canada's 2006 Aboriginal Children's Survey, this article presents an overview of how often First Nations children living off reserve, Métis children and Inuit children aged 2 to 5 consume various types of food, including foods considered traditional or country among Aboriginal people. The frequency with which First Nations children living off reserve and Métis children consumed items from major food groups tended to be similar. While lower percentages of Inuit children were reported to regularly consume items from these food groups, relatively high percentages of Inuit children consumed traditional or country foods. Around two-thirds of all Aboriginal children ate fast food and processed foods at least once a week, and just over half had salty snacks, sweets and desserts at least once a day. Consumption patterns varied, depending on whether children lived in a Census Metropolitan Area/Census Agglomeration.

Keywords

Aboriginal, child health, diet, food, indigenous

Authors

Kellie A. Langlois (1-613-951-3806; kellie.langlois@statcan.gc.ca), Leanne C. Findlay (1-613-951-4648; leanne.findlay@statcan.gc.ca) and Dafna E. Kohen (1-613-951-3346; dafna.kohen@statcan.gc.ca) are with the Health Analysis Division at Statistics Canada, Ottawa, Ontario K1A 0T6.

Considerable attention has been devoted to the health of Aboriginal children,[1-3] but relatively little is known about their nutrition. The Health Canada publication, *Eating Well with Canada's Food Guide – First Nations, Inuit and Métis* (CFG),[4] offers guidelines that include foods considered traditional or country among Aboriginal people, such as bannock and wild game. Based on the results of Statistics Canada's 2006 Aboriginal Children's Survey (ACS), this article presents an overview of the frequency with which First Nations children living off reserve, Métis children and Inuit children aged 2 to 5 consume various types of food (see *The data*).

Major food groups

The CFG[4] recommends that, every day, children aged 2 to 5 consume a minimum (depending on age) of two to four servings of milk and alternatives, one to two servings of meat and alternatives, four to six servings of fruit and vegetables, and three to six servings of grain products. Rather than the number of servings, the ACS asked the parent/guardian how frequently the child consumed various types of food. While consumption frequency is not equivalent to servings, the ACS results do indicate the nature of dietary intake among Aboriginal children.

According to parent/guardian reports, 96% of First Nations children living off reserve and Métis children consumed milk/milk products at least once a day (Table 1). About 80% of First Nations children living off reserve and Métis children ate meat, fish or eggs at least once a day. Close to 90% of First Nations children living off reserve and Métis children consumed fruit at least once a day, and more than 80% consumed vegetables at least once a day.

For Inuit 2- to 5-year-olds, the frequency of consumption of items from these food groups was different. About 86% of Inuit children consumed milk/milk products at least once a day. Two-thirds of Inuit children ate meat, fish or eggs at least once a day. Almost 70%

Table 1
Prevalence of frequency of consumption of selected food groups among First Nations children living off reserve, Métis children and Inuit children, household population aged 2 to 5, Canada, 2006

Food group/ Frequency of consumption	First Nations living off reserve (n=3,640)			Métis (n=2,685)			Inuit (n=1,234)		
		95% confidence interval			95% confidence interval			95% confidence interval	
	Prevalence	from	to	Prevalence	from	to	Prevalence	from	to
	%			%			%		
Milk and milk products									
Less than once per day	4.3	3.6	5.1	3.6	3.0	4.4	14.1	12.4	16.1
Once per day	11.5	10.4	12.7	10.7	9.5	11.9	16.2	14.1	18.4
Twice or more per day	84.2	82.8	85.5	85.7	84.3	87.0	69.7	67.1	72.2
Fish, eggs and meat									
Less than once per day	18.0	16.7	19.4	19.2	17.6	21.0	33.5	30.9	36.3
Once per day or more	82.0	80.6	83.3	80.8	79.0	82.4	66.5	63.7	69.1
Fruit (excluding juice)									
Less than once per day	10.8	9.7	11.9	9.9	8.8	11.3	31.5	28.9	34.3
Once or twice per day	53.6	51.8	55.4	55.7	53.7	57.8	48.3	45.1	51.5
Three or more times per day	35.6	34.0	37.4	34.3	32.3	36.3	20.2	17.6	23.1
Vegetables									
Less than once per day	17.7	16.4	19.1	14.3	12.9	15.8	47.7	44.8	50.7
Once or twice per day	61.9	60.1	63.7	65.1	63.1	67.1	43.7	40.7	46.7
Three or more times per day	20.4	18.9	21.9	20.6	19.1	22.3	8.6	6.9	10.6
Bread and pasta									
Less than once per day	15.5	14.2	16.8	14.6	13.2	16.1	26.0	23.6	28.4
Once per day	31.4	29.7	33.2	30.4	28.5	32.3	34.3	31.5	37.2
Twice or more per day	53.1	51.2	55.0	55.0	52.9	57.0	39.8	36.7	42.9
Fast food and processed foods									
Less than once per week	36.5	34.8	38.3	34.7	32.7	36.8	29.8	27.1	32.7
Once per week or more	63.5	61.7	65.2	65.3	63.2	67.3	70.2	67.3	72.9
Soft drinks and juice									
Less than once per day	23.7	22.2	25.3	24.3	22.6	26.1	20.9	18.4	23.7
Once per day	23.5	22.1	25.1	25.2	23.4	27.0	19.6	17.2	22.2
Twice or more per day	52.7	50.9	54.5	50.5	48.4	52.6	59.5	56.4	62.5
Salty snacks, sweets and desserts									
Less than once per week	8.8	7.9	9.9	7.4	6.4	8.6	9.1	7.4	11.1
Once per week or more	39.0	37.2	40.8	37.2	35.3	39.2	35.0	32.1	38.1
Once per day or more	52.2	50.3	54.1	55.4	53.3	57.4	55.9	52.7	59.1

Source: 2006 Aboriginal Children's Survey

of Inuit children had fruit at least once a day, and 52% had vegetables at least once a day; 14% did not eat vegetables (data not shown).

Two other studies have examined the diet of Aboriginal children in Canada.[5,6] Preliminary results for First Nations children from the 2007/2008 Regional Health Survey suggest that 60% consume milk, 37% consume protein, 35% consume vegetables, and 49% consume fruit several times a day.[5]

According to results of the Inuit Child Health Survey,[6] the percentages of Inuit children aged 3 to 5 living in Nunavut who met or exceeded the CFG recommendations were 24% for milk, 97% for meat, and 9% for fruit and vegetables. Differences from the ACS findings may reflect survey methodology. Information for the Nunavut study was collected via a 24-hour dietary recall, which is a more thorough assessment of food intake. The Nunavut study also included a measure of portion (serving) size and a more extensive list of items within each food group.

Little information is available to compare ACS findings with food consumption among other children in Canada. A Quebec study found that 48% of 4-year-olds met the CFG recommendation for milk; 39% met the recommendation for meat; and 17% met the recommendation for fruit and vegetables.[7] Among a national sample of slightly older children (ages 4 to 8), fewer than two-thirds met the recommendation for milk; 77% for meat; and 29% for fruit and vegetables.[8] These two studies were also based on 24-hour dietary recalls.

The data

Data are from the 2006 Aboriginal Children's Survey (ACS).[9] The ACS was conducted by Statistics Canada and sponsored by Human Resources and Skills Development Canada, and developed with input from Aboriginal advisors and Aboriginal people from across the country. The target population consisted of First Nations children living off reserve, Métis children and Inuit children in the 10 provinces, and all children living in the three territories. Rather than the term "North American Indian," which was used on the ACS, the term "First Nations" is used throughout this report.

The sample was selected from households with children younger than age 6 who were identified as Aboriginal in the 2006 Census. Children living on First Nation reserves were not included in the sample; thus, the results of this analysis may not apply to the on-reserve population, who made up an estimated 47% of First Nations children aged 0 to 5 in the 2006 Census.[10] Details about the ACS are available elsewhere.[8]

The current study pertains to children aged 2 to 5 (unweighted n = 7,450). Infants were excluded because a large part of their diet consists of breast milk and formula, which were not a focus of the present study.

The parent/guardian provided socio-demographic information about the child. Based on 2006 Census data, children were identified as living in an urban area (Census Metropolitan Area /Census Agglomeration) or not. A census metropolitan area (CMA) or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a large urban area (the urban core); the urban core in a CMA must have a population of at least 50,000, and in a CA, at least 10,000.[11]

The parent/guardian was asked how often the child usually consumes the following foods and beverages: milk and milk products; fish, eggs and meat; fast food and processed foods; fruit (excluding juice); vegetables; bread and pasta; soft drinks and juice; and salty snacks, sweets and desserts. Consumption frequency per day, per week, per month or per year was recorded.

Respondents were also asked if and how often the child eats traditional or country foods: bannock or fry bread; salt and fresh water fish; large game animals such as deer, moose or caribou; game birds such as goose, duck, partridge or ptarmigan; small game animals such as rabbit or muskrat; and sea-based mammals such as whale, seal or walrus.

Statistical comparisons were not made between Aboriginal groups because of differences in geographical locale and culture. However, to examine within-group variations based on geography, chi-square tests were performed between children who did or did not live in a CMA/CA. Survey sampling weights were applied to account for the complex survey design, and a bootstrapping technique was applied when calculating estimates of variance.[12]

This article has a number of limitations. The ACS list of dietary items was limited and did not include some key items (for example, cereals and some types of traditional foods). Information was collected on the frequency of consumption, not the amount consumed. Thus, it is not possible to determine if the child met intake recommendations. Because the ACS did not include Aboriginal children living on reserves, the findings cannot be generalized to the on-reserve population. The ACS was conducted during the winter (October to March), which may have influenced the availability of certain foods, and thereby, misrepresented consumption patterns. Finally, consumption frequency was reported by the parent/guardian, not the child. However, given the young ages of the sample, the parent/guardian is likely a more reliable source of information about the child's diet.

Other foods

Approximately two-thirds of Aboriginal 2- to 5-year-olds consumed fast food and processed foods at least once a week (Table 1); 11% of First Nations children living off reserve, 9% of Métis children, and 24% of Inuit children consumed these foods daily (data not shown). Conversely, 7% of First Nations children living off reserve, 5% of Métis children and 14% of Inuit children were reported by their parent/guardian as never eating fast food and processed foods. More than half of Aboriginal children drank soft drinks or juice at least twice a day, and had salty snacks/sweets/desserts at least once a day.

Traditional or country foods

Eating Well with Canada's Food Guide – First Nations, Inuit and Métis[3] gives traditional or country foods as examples of items in some food groups; for instance, "traditional meats and wild game" is among the examples for "meat and alternatives." According to the 2006 ACS, traditional or country foods were consumed by 70% of First Nations children living off reserve, 62% of Métis children, and 90% of Inuit children (Table 2).

A quarter of First Nations children living off reserve had bannock or fry bread at least once a week, as did 15% of Métis children. Very few (less than 5%) ate bannock or fry bread every day; in fact, 46% of First Nations children living off reserve and 60% of Métis children did not eat bannock or fry bread at all. Salt and fresh water fish were consumed at least once a month by 39% of First Nations children living off reserve and 37% of Métis children. As well, 33% of First Nations children living off reserve ate large game animals at least once a month, as did 28% of Métis children. The percentages who consumed game birds and small game animals on a monthly basis were lower: 8% and 5%, respectively, for First Nations children living off reserve, and 8% and 4%, respectively, for Métis children. Virtually no First Nations children living off reserve or Métis children were reported as consuming sea-based mammals.

Relatively high percentages of Inuit children were regular consumers of traditional or country foods. A quarter of Inuit children ate bannock or fry bread every day, and for 60%, consumption was at least weekly. At least once a month, 76% of Inuit children had large game animals, and 68% had salt and fresh water fish. A third of them ate game birds once a month or more, but monthly consumption of small game animals was reported for only 6%. More than half of Inuit children consumed sea-based mammals; one-quarter did so at least once a week (data not shown).

Table 2
Prevalence of frequency of consumption of traditional or country foods among First Nations children living off reserve, Métis children and Inuit children, household population aged 2 to 5, Canada, 2006

Food item/ Frequency of consumption	First Nations living off reserve (n=3,640)			Métis (n=2,685)			Inuit (n=1,234)		
		95% confidence interval			95% confidence interval			95% confidence interval	
	Prevalence	from	to	Prevalence	from	to	Prevalence	from	to
	%			%			%		
Traditional or country foods									
No	29.7	28.0	31.4	37.6	35.6	39.6	9.8	7.5	12.6
Yes	70.3	68.6	72.0	62.4	60.4	64.4	90.2	87.4	92.5
Bannock or fry bread									
Does not consume	45.6	43.8	47.3	60.3	58.2	62.2	19.1	16.2	22.4
Less than once per week	29.7	28.1	31.3	25.0	23.3	26.8	21.8	19.3	24.5
At least once per week, but less than once per day	20.8	19.4	22.3	12.5	11.4	13.8	34.2	31.4	37.0
Once per day or more	4.0	3.4	4.7	2.2	1.7	2.9	24.9	22.7	27.3
Salt and fresh water fish									
Never or less than once per month	61.3	59.6	63.0	63.1	61.1	65.1	32.3	29.2	35.5
Once per month or more	38.7	37.0	40.4	36.9	34.9	38.9	67.7	64.5	70.8
Large game animals such as deer, moose or caribou									
Never or less than once per month	67.3	65.6	69.0	71.6	69.7	73.3	24.0	21.0	27.2
Once per month or more	32.7	31.0	34.4	28.4	26.7	30.3	76.0	72.8	79.0
Game birds such as goose, duck, partridge or ptarmigan									
Never or less than once per month	92.2	91.2	93.1	92.0	90.9	92.9	67.0	64.4	69.4
Once per month or more	7.8	6.9	8.8	8.0	7.1	9.1	33.0	30.6	35.6
Small game animals such as rabbit or muskrat									
Never or less than once per month	94.7	93.9	95.5	95.9	95.2	96.6	94.2	92.8	95.3
Once per month or more	5.3	4.5	6.1	4.1	3.4	4.8	5.8	4.7	7.2
Sea-based mammals such as whale, seal or walrus									
Does not consume	99.4	99.1	99.7	99.5	99.2	99.7	45.9	43.0	48.9
Consumes	0.6[E]	0.3	0.9	0.5[E]	0.3	0.7	54.1	51.1	57.0

[E] use with caution
Source: 2006 Aboriginal Children's Survey

Few other studies have examined traditional or country food consumption among Aboriginal children. The Inuit Child Health Survey found that 99% of Inuit preschoolers living in Nunavut were reported to have eaten traditional foods in the past month, and 46% in the past day.[5]

Geographical differences

Researchers have noted that the dietary habits of Aboriginal children, particularly those living in remote communities, may be influenced by the accessibility and availability of foods such as fruit and vegetables.[13,14]

An examination of consumption patterns of First Nations children living off reserve and Métis children revealed few differences between those who lived in a Census Metropolitan Area /Census Agglomeration (CMA/CA) versus those who did not (data not shown). However, Inuit children who lived in a CMA/CA (15.8% of the sample) were more likely than those not living in a CMA/CA to consume milk/milk products at least twice a day; to eat fish, eggs or meat at least once a day; and to consume fruit or vegetables three or more times per day. They were also less likely to have soft drinks and juice at least twice a day.

All types of traditional or country foods were less likely to be consumed by Aboriginal children living in a CMA/CA, compared with those not living in a CMA/CA.

Conclusion

According to the 2006 ACS, the frequency with which First Nations children living off reserve and Métis children consumed items from major food groups tended to be similar. While lower percentages of Inuit children were reported to regularly consume items from these food groups, relatively high percentages consumed traditional or country foods. Around two-thirds of all Aboriginal children ate fast food and processed foods at least once a week, and just over half had salty snacks, sweets and desserts at least once a day. The frequency of consumption of various foods differed, depending on whether children lived in a CMA/CA. ■

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